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AUTOMAKER PURCHASING

A Guided Tour Of Where They're Buying, How, And Why

Audi's 5000S Turbo Quattro: Another Giant Leap For Mankind

Point/Counterpoint On Japanese Voluntary Restraints

AUTOMOTIVE INDUSTRIES

July, 1985/Volume 165, Number 7

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"You better get your own house in order...The union has to give up these silly work rules. Read my book. Nobody listens in Washington. We have a plan; our '89s are almost finished. You need a game plan. The only guy without a plan is the US government at the federal level. We—government, labor, management—are all adversaries. *That's* civil war, guerrilla warfare. Who the hell needs that?"—Lee Iacocca, chairman of Chrysler Corp.

"My goal is to get all the doctors out of their Rolls and Mercedes and back into Cadillacs."—Richard O'Brien, GM director of employee benefits, on cutting health costs.

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ONE OF THE ABC PUBLISHING COMPANIES

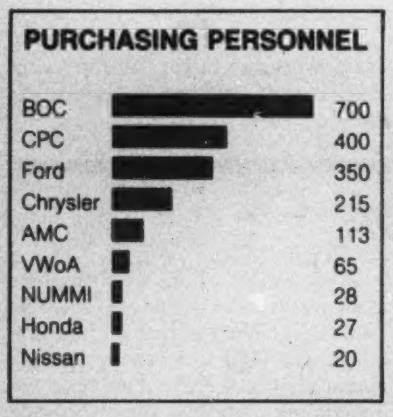
A GUIDED TOUR OF AUTOMAKER PURCHASING DEPARTMENTS

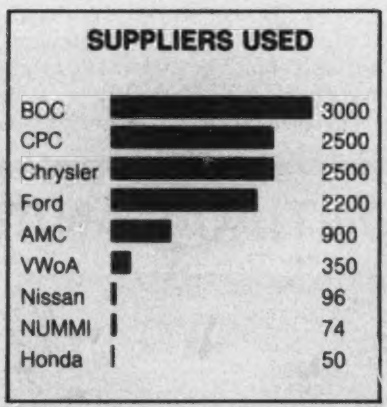
Straight talk from the big nine automakers—why they're sourcing where and from whom. And why breaking in is hard to do.

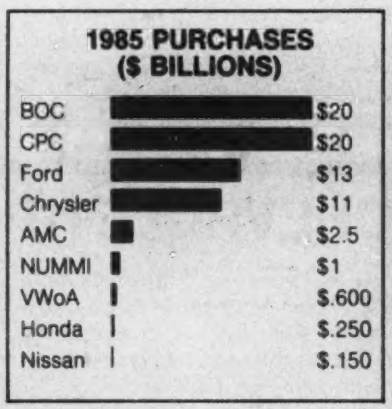
by Joseph M. Callahan

What follows is basically a guided tour of the purchasing departments of the nine auto companies building cars in the United States today. The companies are divided into US-based operations: GM's Chevrolet-Pontiac-Canada (CPC) group and Buick-Oldsmobile-Cadillac (BOC) group; Ford Motor Co.; Chrysler Corp. and American Motors—and foreign-owned or managed: Honda; Nissan; NUMMI and Volkswagen.

Since selling widgets and wodgets to automakers these days takes a little more than a suit full of cigars or a lavish entertainment budget, *AI* went to the top purchasing honchos in the industry to probe the new trends they see emerging in the complex relationship between an automaker and its suppliers.





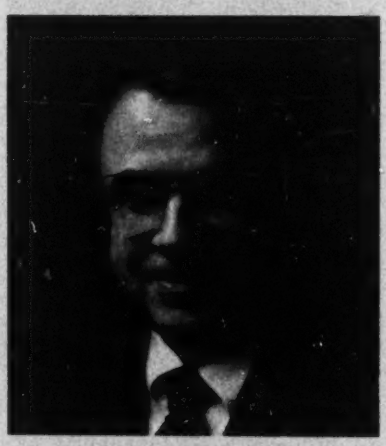


BUICK-OLDSMOBILE-CADILLAC

(Buick-Oldsmobile-Cadillac's Material Management Staff now has six people who manage the purchase and delivery of about $20 billion worth of commodities that are purchased each year from some 3000 suppliers. Some 700 other staffers also buy components and manage material in the four platform teams.)

Although a primary goal of GM's reorganization last year was to become more efficient with fewer people, BOC has discovered that to achieve some other goals, including fixing responsibility, it has become necessary to set up four material management groups—one for each platform.

Only three procurement staffs were required previously. There's also a separate body procurement group. Paint is now purchased at the group level, although other commodities may be added later.



Darrah Porter, director of materials management at BOC.

Asked if this didn't produce duplication, Darrah Porter, director of materials management at BOC, said, "If you focus on function, it might appear so. But if you broaden your focus to concentrate on the product, when things go right, or wrong, you can see who has the responsibility."

Porter said his people are looking at off-shore sourcing opportunities, but nothing is ready for announcement at present.

GM is somewhat restricted in this

(Continued)

"We don't have the resources to deal with the number of suppliers we're deal ing with today."

regard because of agreements it worked out with the UAW in the last contract.

Porter said there are three major changes now occurring at BOC. One trend is toward "front loading," in which suppliers are invited to participate in early product development to improve the quality and to make other benefits possible.

The second goal is to make continuous improvement in quality and productivity even after the part is being produced properly. The third goal involves a "participatory environment" in which a team effort is encouraged to implement the continuous improvement.

Other Comments:

- Computer-to-computer links with suppliers are already a fact in many cases, although it will take up to seven years to complete the network. Buick City may be an industry leader in this activity.
- SPC will be needed by suppliers to achieve the improvements BOC wants.
- AIAG is essential to the continued improvement in the supply base. It is one of the approaches that will help the US become competitive worldwide.
- BOC will set up a supplier council and adopt other measures to improve communications with suppliers.

On the question of reducing suppliers, he said, "We don't have the resources to deal with the number of suppliers that we're dealing with today. So, as we go on, accomplishing our objectives, there will be a shakeup.

"The kind of supplier that will be retained is the supplier who has the capability to do it right the first time and ship it right 100% of the time at a competitive cost.

"I didn't say a competitive 'price' even though we'll still be using prices. Our commitment is to work with our suppliers on a mutual cost so that the price generates out of that relationship."

In the future, he said BOC anticipates partnerships with its suppliers in which his people will lay a part in front of a supplier with a cost target on it and ask the supplier if he wants to meet that challenge over the life of the product, possibly six or eight years. The plan might call for a certain percent performance improvement over the years.

CHEVROLET-PONTIAC-CANADA

(The Chevrolet-Pontiac-Canada (CPC) Group at General Motors has a staff of 400 people in its Purchasing Department who spend about $20 billion a year with 2500 suppliers.)

Since last fall the Material Management Department of GM's CPC Group has done a good deal of soul-searching to find out how it can better serve the Group's retail customers by improving its relations with suppliers.

Donald Pais, director of material management, said this effort first consisted of an exploratory meeting with 40 major suppliers. Then, a "blind survey" (no identities) was made to see how a much larger group of suppliers viewed their relationship with GM. Later, several multi-disciplinary teams were formed with both GM and supplier people participating to further explore several areas.

Last April CPC held a major conference with its suppliers to explain the start of the CPC's new approach to purchasing. Pais emphasized that this was only a first step and it will take some years before the whole new system evolves. He said the new purchasing practices involved these six steps:

Donald Pais, director of material management at CPC.

1. Improved financial relationships. The suppliers said they wanted some new approaches to how they were paid, possibly going to electronic transfer of funds. An important change coming involves "progress payments," whereby the supplier gets paid for some costs before a project is completed.

2. Communications with suppliers is an area that needs lots of work, Pais said. He anticipates that in time suppliers will be able to tie in through computers to CPC's data base for scheduling, shortage and expediting information. This system should be set up for all suppliers in the near future. Pais added, "We're working closely with the AIAG on that.

"Also there's a heck of a lot of other information flowing between us and our vendors—drawings, engineering information and so forth. None of that information should be in hard copy."

He said that communications between the president of the supplier firm and GM's management needs to be improved, especially if the supplier is contemplating a major business decision.

3. Schedule stability and some processes that CPC has in place to really help that problem. In addition, one team is working to better define the role of the buyer—where it starts and ends. Some suppliers complained that buyers were even hard to reach.

"One problem is that a number of suppliers don't understand that we're restructuring."

4. Quality and some of CPC's new programs for improving it. Quality has now been incorporated into CPC's purchasing operation.

5. Single sourcing. This is a strong CPC trend and 97% of the chassis parts for Chevrolet and Pontiac are single-sourced.

He said that single sourcing has nothing to do with the number of suppliers. In the past many GM suppliers have made 50% of mythical Part A and 50% of Part B. Now, one supplier will make 100% of Part A and another will do 100% of Part B.

6. Early supplier involvement. This, according to Pais, is a process in which the buyer and the supplier become involved early in the design stage of the part and possibly before the design stage. A good example of this was the Pontiac Fiero. The sources of the plastic skins were selected before the design was completed.

"You're always plagued with last-minute engineering changes," he said. "Our analysis shows that a big percentage of those changes were requested by the supplier to suit his manufacturing processes. The engineer usually says, 'Fine,' but why wait until the part is released?"

In conclusion, Pais said, "One problem is that a number of suppliers don't understand that we're restructuring. We also want to talk long-term contracts with suppliers.

"If you stop to think about it, contracts have many nuances. You've got to have that intangible of trust, knowing one another and understanding the commonality of objectives, the interdependence and the willingness to be participative. Suppliers tell us we've lost some of that over the years, but we're going to work on it."

FORD MOTOR COMPANY

(Ford Motor Co. spends $13 billion a year on production parts, with a staff of 350 people who buy from about 2200 suppliers.)

"I've told our suppliers that of the $2500 [Japanese cost advantage], somewhere between $500 and $700 of it is outside materials cost," said Clinton D. Lauer, Ford's executive director of production purchasing at the North American Automotive Operations. "We've got to find ways in the next three-to-five years to bring that down to nothing. If we're going to remain a viable competitor in this industry, we have to be able to produce products at competitive cost levels.

"In fact, we want our suppliers to shoot for at least as much productivity, if not more, than the Japanese are getting.

"I could buy all the parts from Japan and be at the same cost level as the Japanese," Lauer continued. "But, in fact, I want to buy from other parts of the world because I think some of them offer advantages over the Japanese.

"Clearly there's a need for a US supply base because I think that in most commodities your most efficient supply base five years from now will be right here. I'm relatively optimistic."

Clinton Lauer, Ford NAAO production purchasing executive director.

Lauer said Ford's primary goal is quality and that if quality can be improved, Ford's secondary goal—lower costs—will also be achieved.

Ford Motor Co. has a system for rating suppliers and Lauer has asked his buyers to start weeding out the least capable suppliers.

Of the 100 points possible to get in this rating system, 20 points are awarded if the supplier uses Statistical Process Control.

Lauer has also notified Ford's component suppliers that they're going to have to become more deeply involved in the design of their components because Ford isn't going to be able to afford all the design people it has historically had.

"And we're not so sure we can design things as well as the suppliers," he continued. "We've told our suppliers we'd like them to work closer with our engineers. Secondly, we've told a number of them that we want them to take specific design responsibility.

"We're thinking in terms of black boxes or grey boxes or whatever. We've been increasing those kinds of

(Continued)

Other Comments:

- Ford has tended to buy more of its vehicle outside, rather than inside during the past three years.
- Ford is consolidating its purchases, allowing suppliers to more efficiently run more material down the same production lines.
- Ford and some suppliers are trying to sort out how CAD (Computer-Aided Design) and CAM (Computer-Aided Manufacturing) can be adapted to their operations.

CHRYSLER CORPORATION

(Chrysler Corp.'s Production Purchasing Department has a staff of 215 people who spend around $11 billion a year now with some 2500 suppliers.)

"[The end of the VRA] is one of the biggest changes we've ever had," said Thomas T. Stallkamp, director of production purchasing at Chrysler.

"And because the car companies are changing drastically, purchasing has to change, too. So we're investigating several new ways of doing business.

"The first one we're doing is called Value Managed Relationship (VMR). This is an attempt to work closer with suppliers so that they have a longer time frame to deal with us and more assurance of business. Now we're trying to integrate purchasing into design and into the forward model engineering activities much more closely.

"We have design contests for forward models. We're doing it now for the Liberty Program and for selected things on the 1988 cars. Our integration is to identify the source earlier. Hopefully, we can reduce our engineering manpower. We can handle more projects with the same number of engineers, and we design the part to fit more closely a supplier's process. We're trying to get closer to the supply base. This is the way it was in the US 50 years ago."

Asked about a report that Chrysler wants to reduce the cost of the parts it purchases by $1100 a car, he said he prefers to use 30% rather than the dollar figure as the goal for cost reductions.

"The 30% is the target we've established and told the suppliers about," Stallkamp said. "It's a tough culture shock when you go to a guy and say you'd like him to reduce his prices by 30%. But we try to work with him.

"It's not just a pure raw cost of each piece, but in the total cost that went into developing the part. Now by working with the supplier from the start on the prototype we hopefully can achieve the 30% reduction. It's tough for the supplier but we do it in phases."

He said that offshore suppliers and even some aggressive US suppliers are responding affirmatively to this challenge. Asked if US suppliers can really meet this demand, he said they surely can, adding that there are labor rates now in the US as low as Japan's.

"We have suppliers in the southern US with $6 an hour labor costs and fully-loaded [with fringe benefits] it's less than $10, and $10 is what they quote in Japan for Mitsubishi's suppliers," he said. "We even have suppliers in Michigan who pay $10 an hour, including fringes.

"All this publicity of going offshore is in my mind not as negative as it appears. What we're trying to do is to show US suppliers just what their competition is. Our hope is that they will respond to the offshore competition, working with us over a longer time frame and producing more imaginative contracts."

To communicate its position clearly to suppliers, Chrysler now issues a monthly newsletter, conducts frequent supplier meetings and holds seminars for its suppliers. Chrysler reportedly now buys about 10% of its commodities offshore. Stallkamp says whether this goes to 15% or more depends on the response of suppliers.

"Some labor rates would be impossible for US suppliers to respond to, especially in Korea and Taiwan," he said. "So the very labor-intensive products will probably go offshore. But some technology-oriented things like semi-conductors will probably come back here. This country still has a lot of potential."

"I want to buy from other parts of the world."

Thomas T. Stallkamp, director of production purchasing at Chrysler.

"We're trying to get closer to the supply base."

Other Comments:

- Just-in-time is one way for suppliers to partly achieve the 30% target.
- Chrysler is very interested in returnable containers and getting rid of cardboard boxes.
- The AIAG is hopefully a mechanism to get the US OEMs together so it can compete better with the import companies.
- Chrysler recently surveyed its suppliers to get their feelings about computer-to-computer communications and will soon announce its electronic program for suppliers.
- Electronic transfer of funds to suppliers has already been started by Chrysler in Canada because of the slowness of Canada's postal service and their central banks.

AMERICAN MOTORS

(AMC's Procurement Department has a staff of 113 people who spend a total of about $2.5 billion annually with some 900 suppliers.)

Despite its current sales and cash-flow problems, American Motors has an active Procurement Department that's being improved under director of purchasing John Bechtel, a one-time Ford purchasing executive.

"A number of things are changing at American Motors," Bechtel said. "We are now trying to get up-front on new programs, to get new major components identified earlier, and to get vendor output in the design and development feasibility back at the definition stage.

"So we're doing a lot of pre-sourcing, pre-awarding and then working directly with the vendor on engineering from the concept right down to the final product."

Noting that this approach almost automatically leads to longer-term contracts, Bechtel said, "It's usually some kind of an understanding about productivity and longevity and how we will handle the economic adjustments, the quality standards and most of the little 'ticks'."

AMC director of purchasing John Bechtel.

Asked about off-shore sourcing, he said that Renault has design responsibility for AMC's cars, which therefore get quite a few components from Renault. And even excluding the parts from France, he said that AMC's off-shore sourcing is still relatively high, compared to the rest of the industry. About 35% of its parts are imported, including a goodly percent from Japan. Mexico is also a significant source for Renault-built engines and Brazil is a minor source.

> *"We're certainly looking at other foreign sources."*

Regarding the future, Bechtel said, "We're certainly looking at other foreign sources. The next step is probably Korea."

Sourced component modules that AMC has slated for use in its cars include completed instrument panels, complete built-up seats, windows equipped with weather-stripping and even pre-assembled wheels and tires. For it's Canadian-built front-wheel-drive 1988 car, the company will purchase most of the body panels from a supplier.

Bechtel said his company is increasingly working with its suppliers on computer-to-computer communications, bar-coding, standardized packaging and other standardized items being implemented by the AIAG.

NUMMI

(New United Motors Manufacturing Inc. (NUMMI), Fremont, CA has a staff of 28 people in purchasing who will spend over $1 billion this year with some 74 US suppliers and about 100 Japanese suppliers.)

Following Toyota's practices, NUMMI begins to qualify a supplier 18 to 20 months before production start-up.

"Early in the qualifying process our people will be spending time at suppliers, with team after team visiting the supplier to learn as much as they can about the firm, enhancing the strengths and seeking solutions to his weaknesses," said Alan G. Perriton, the former director of materials management on GM's corporate staff who is NUMMI's advisor on material management.

"The reaction from the supplier community is that they basically like this kind of early interface, saying, 'We think we can make a contribution, and you're telling us it's our responsibility to make that contribution.' "

Alan G. Perriton, NUMMI's advisor on material management.

Perriton elaborated, "Buyers here are assigned by supplier, not by part numbers. Buyers deal with suppliers on the basis of long-term relationships—not twelve-month relationships.

"Once you are a qualified and established supplier, unless you do something drastically wrong, you are on the team. Even then we will spend the time necessary to bring you back in line. You have the business as long as you perform as a good supplier.

"We might also see some differentiation in the supplier approach in the establishment of prices. They are often cost-targeted as opposed to strictly low-bid based. A great deal of negotiation occurs between the buyer and the supplier."

A Toyota operating principal called "Heijunka" is incorporated into the NUMMI system. This is a production-leveling philosophy that says your business runs more efficiently and cost-effectively if you do

(Continued)

not have to fluctuate production schedules by a large amount.

If this is done, Perriton said, "It's going to allow you to reduce your inventory levels, allow you to manage your work force more effectively and allow you to run your machinery and equipment to optimize your maintenance. All this permits projecting production schedules much further in advance than normal.

"Another significant thing showing up here is that quality is absolutely required. Specifications, quality standards, inspection standards and so forth are predetermined for everything that occurs in the manufacturing process. If the supplier ships us a bad batch, we send it back to him 100% and close the plant for two days. And that's unfortunate.

"Once you're a qualified supplier, unless you do something drastically wrong, you're on the team."

He said each NUMMI buyer works with one to ten suppliers, depending on the amount of work involved. He's not a "brake system buyer," but a buyer for supplier A, B or C. The motivation is greater familiarity with the supplier.

Perriton said about 50% of the car's content, including assembly labor, is American. Steel is about 50% US-sourced, with LTV Corp. supplying the US portion and the electrolytically-galvanized steel coming from Japan.

He concluded that NUMMI expects its current supply situation to remain very stable, although it will consider buying electrostatically-galvanized steel here when it comes onstream.

VOLKSWAGEN OF AMERICA

(The Production and International Purchasing Department of Volkswagen of America has a staff of 65 people who spend about $600 million each year on purchases from about 350 US suppliers for both production and non-production items.)

Volkswagen of America has in the past year or so increased purchases from W. Germany by about 25%, according to F. Robert Joseph, VWoA's director of production and international purchasing.

Joseph indicated the strong dollar is one reason for the increase.

"Secondly, with our volume being relatively small at present, just the cost of tooling-up gets into the calculations. If the part is tooled overseas, frequently the bottom line number suggests that we can buy it more economically overseas."

Joseph and his staff have three main functions—buying production parts for the Golf that's produced in New Stanton, PA; handling the importation of production parts from Germany and elsewhere; and purchasing and exporting about $100 million in parts from US suppliers to VW plants in Germany and elsewhere. From the cost standpoint, more than 50% of the US-built Golf is sourced here, he said.

In the past the VW headquarters purchasing group has handled the buying of parts for VWoA in Japan and the Orient. However, in the past six to nine months Joseph's people have been making some initial contacts for themselves in the Far East and this buying will become more aggressive.

F. Robert Joseph, VWoA's director of production and purchasing.

Another important area of growth in VW sourcing will be in northern Mexico because the government has made it extremely attractive for US automakers to purchase wiring harnesses and other components. These commodities are strictly for export, mostly to the US.

Regarding the demands VW makes on its suppliers, Joseph said, "Obviously, after quality, price becomes very important. Also important is their willingness to meet whatever special requirements we have. And there's myriad other factors—supply history, logistics and so forth.

"Obviously, after quality, price is very important."

Other Comments:

- VWoA is slowly shifting to longer contracts with suppliers and using more supplier engineering, as the custom has been in Germany.
- Just-in-time delivery is not a factor because of the distances involved. However, in time Joseph expects all VWoA suppliers will employ Statistical Process Control.
- The AIAG is important to VWoA, and VW of Germany is pressing for the development of a similar organization in Europe.
- Electronic communications with suppliers is now starting at VWoA and in time it's expected to spread to all vendors.

He said VWoA has not gone out to its suppliers with letters asking for price reductions because, "We have always felt that we were effectively trying to hold the line on price increases to begin with.

HONDA OF AMERICA MFG.

(Honda of America Mfg., Marysville, OH has a Purchasing Department of 27 people who spend about $250 million a year with 27 US suppliers. The company build Accords at present and is preparing to build Civics at the plant in the near future.)

Darrell Shown, Honda of America Mfg.'s purchasing manager since 1981, said his company now uses about 50% local content for its cars. These are the heavier, bulky items such as tires, batteries, carpets, seats, glass, air conditioning and trim parts. Over 90% of the steel is purchased from one US firm.

However, he said his company is now working on a program to raise its US content to 60% by purchasing other products such as electronic devices and controls that now come from Japan.

But Shown said these probably will be sourced at Honda's "captive" suppliers after they're established here. He said all the other Japanese vehicle makers in the US have similar plans.

"We will not substitute quality for anything. If the part can't be produced in the US with a high quality compared to Japan, then we will not source it here. Along with that, it must be competitive and delivered on time. We are definitely involved in just-in-time."

He views Statistical Process Control as an increasingly popular approach and one that is positive, but Honda doesn't pressure its suppliers to adopt it.

"But," he continued, "we have our own program we want them to follow. Zero Defects is the ultimate goal. We assist our suppliers in achieving that goal. A majority of our suppliers do supply zero-defect parts to us, although we have to assist those that are not up to that level.

Darrell Shown, Honda of America Mfg. purchasing manager.

"We have implemented a QAV [Quality Assurance Visits] program which is dedicated to improving the quality of the parts supplied to Honda. We believe in total involvement with our suppliers. We look at them as an extension of our plant. Quite honestly, we make them perform.

'If there's a problem with any component or part being manufactured on the outside, we immediately dispatch people from purchasing, quality control or the die maintenance area to eliminate that problem."

Shown said his people communicate directly with every supplier on a daily basis and often many times during the day, regarding their performance, their production and what's happening within their facility.

"We want to know if they're having any problems," he continued, "or if they're anticipating any problems. We're checking to see if they have enough raw material and adequate parts from their suppliers. We check when they're scheduled to put in a mold or die to make our parts. We just try to head off any problem before it develops."

"We believe in total involvement with our suppliers. Quite honestly, we make them perform."

Honda doesn't have programs for improving productivity at supplier plants because, "We do our homework related to pricing in the beginning."

Commenting on US purchasing, Shown said, "We want to deal with domestic suppliers as much as possible. But the US industry doesn't dictate to us to buy a particular item.

"We're building automobiles [Accords] in Marysville that are sold east of the Mississippi River. The ones we import are sold west of the Mississippi. These two automobiles must be identical. I can't procure an item that's different than the one made in Japan. Many people are not willing to make our designs our way."

He said that one of the biggest problems for Honda is that US suppliers are not competitive in price with the Japanese. The reason for this, he said, is evident when you visit their US plants and observe their "non-competitive ways."

After noting that Honda has a policy of getting a firm commitment from the president of each of its suppliers, he said, "If the president commits to and understands our policy, then there should be no way at all that we should fail because it will be delegated all the way down through the system. It has to start with the president, not with anyone else."

NISSAN

(Nissan Motor Mfg. Corp. USA, Smyrna, TN has a staff of 20 people in its Purchasing Department. They spend about $150 million a year with 96 suppliers.)

Nissan has local content of 45-50% in its cars and 50-55% in its trucks, but it's not satisfied with these percentages and is seeking 100% local content, said Robert Frinier, Nissan's vice president of purchasing and information systems.

Frinier said, "We're continually studying new sourcing alternatives to buy additional commodities in the US. We have a Local Sourcing Task Force that identifies possible sourcing at US suppliers.

"These people visit the suppliers, evaluate them regarding our three principal criteria and then come back to form a group consensus to determine if the supplier meets those crite-

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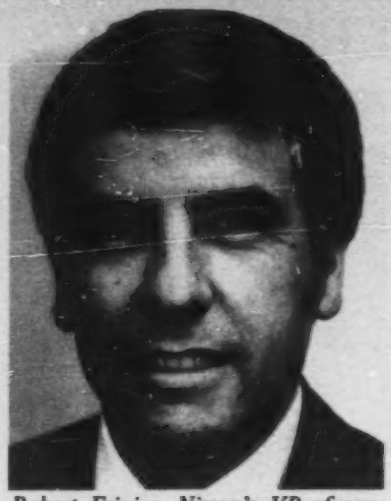
ria and then proceeds to get approval."

The three criteria for a US supplier are simply that he must have quality, cost and dependability that is equal or better than that provided by Nissan's suppliers in Japan.

"Our goal is 100% US sourcing," Frinier said. "But I don't realistically think in the near term we have a shot at that, given our production volume. Our parent company president has told us we should shoot for 100% but things like engines and powertrains could not be manufactured cost-effectively here in (Smyrna) Tennessee until we get 300,000 to 500,000 units of volume."

He anticipates that more Japanese suppliers will be coming to this country and that Nissan undoubtedly will be doing business with them. He said they don't have any in-born advantage and must compete with other suppliers with American management.

Asked about the performance of American suppliers, Frinier said, "I'd say generally very good. They're able to make the parts properly. All of our suppliers meet the criteria of quality and prices.



Robert Frinier, Nissan's VP of purchasing and information systems.

"But there have been some cases in the beginning where the supplier had to learn that when we set a quality standard that we meant it. We won't accept any compromise. We have a very open relationship with our suppliers, visiting them frequently. They're here frequently and we exchange a lot of key ideas."

"Our goal is 100% US sourcing."

Frinier said Nissan doesn't directly set future productivity requirements. Instead, it has life-of-part pricing which means that price won't change until the design changes. Only when the raw material price changes is any price change considered.

He added that Nissan is just getting into just-in-time sourcing, but it is firmly committed to single sourcing.

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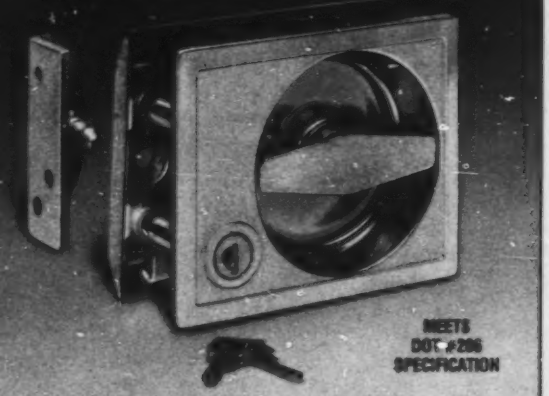

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